

**ABSTRACT**

A system for controlling a dual-speed motor includes a direct current (DC) power supply, a dual-speed DC motor, a first solid-state switch electrically coupled to the DC power supply and a low-speed input of the dual-speed DC motor, a second solid-state switch electrically coupled to the DC power supply and a high-speed input of the dual-speed DC motor, and a solid-state switch electrically coupled between the first solid-state switch and the low-speed input of the dual-speed DC motor, wherein a first side of the solid-state switch is coupled to a power supply side of the system and a second side of the solid-state switch is coupled to a load side of the system.